

U.S. Patent Application No. 10/721,215
Amendment After Final dated September 23, 2005
Reply to Office Action dated May 25, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Currently amended): A process of preparing a nitrided valve metal comprising nitriding a valve metal powder at a sufficient temperature and pressure during a heat treatment that is prior to a deoxidation step, wherein said nitriding occurs at a temperature of from about 200° C to about 600° C.

Claim 2 (Original): The process of claim 1, wherein said nitriding begins at average valve metal temperature of about 200° to about 350° C.

Claim 3 (Original): The process of claim 1, wherein said nitriding occurs prior to a sintering phase of the heat treatment of the valve metal.

Claim 4 (Original): The process of claim 1, wherein said nitriding occurs after a sintering phase of the heat treatment of the valve metal.

Claim 5 (Original): The process of claim 1, wherein said nitriding is accomplished with nitrogen gas.

Claim 6 (Original): The process of claim 1, wherein said nitriding is accomplished with at least one nitrogen-generating compound.

Claim 7 (Original): The process of claim 1, wherein said nitriding results in said valve metal having a nitrogen content of from about 1,500 ppm to about 4,000 ppm.

Claim 8 (Original): The process of claim 1, wherein said heat treatment comprises heating the valve metal to a temperature of from about 1250° C to about 1500° C for a period of

U.S. Patent Application No. 10/721,215
Amendment After Final dated September 23, 2005
Reply to Office Action dated May 25, 2005

time of from about 10 minutes to about 2 hours, wherein said valve metal is tantalum.

Claim 9 (Original): The process of claim 1, wherein said nitriding occurs at a temperature of from about 250° C to about 600° C.

Claim 10 (Original): The process of claim 1, wherein prior to said nitriding, said valve metal is hydrogen degassed.

Claim 11 (Original): The process of claim 1, wherein said nitrided valve metal, after nitriding, is subjected to at least one passivation step, at least one deoxidation step, and at least one sintering step.

Claim 12 (Original): The process of claim 1, wherein said valve metal is tantalum.

Claim 13 (Original): The process of claim 1, wherein said valve metal is niobium.

Claim 14 (Original): The process of claim 2, wherein the average valve metal temperature is increased at a rate of less than 10° C per minute until nitriding is complete.

Claims 15-22 (Canceled)